

In accordance with the guidelines and waived provisions of 37 C.F.R. 1.121 promulgated in the USPTO announcement of January 31, 2003, please make the following amendments.

In the Claims:

1. (Currently Amended) A lamp seal comprising a functionally gradient material and a lead bar of tungsten; wherein the functionally gradient material has layers of mixtures of silica glass as an electrically non-conductive material and molybdenum as a conductive material in which a layer at one end is non-conductive and a layer at an opposite end is conductive, with intervening layers in which the proportion of conductive material increases moving from said one end to said opposite end; wherein the lead bar passes through a hole extending through the functionally gradient material entering in one of said ends and out the other of said ends; wherein the lead bar is attached in a conductive region of the functionally gradient material; and wherein the proportion of conductive material at a point of attachment of the lead bar to the functionally gradient material is no less than 0.6 Vol% and no more than 39 Vol%.

2. (Original) A lamp seal as described in claim 1, wherein said hole is cylindrical with an expanded diameter at the non-conductive end, such that the diameter of the cylindrical hole in the region from the non-conductive end of the functionally gradient material to the point of attachment of the lead rod, satisfies the condition $C = 1.2d \leq C \leq 0.6D$, where C is the diameter of the cylindrical hole in the region from the non-conductive end of the functionally gradient material to the point of attachment of the lead rod, d is an outer diameter of the lead bar and D is an outer diameter of the functionally gradient material.

3. (Original) A lamp seal as described in claim 1, wherein the hole expands in a tapered form from the point of attachment toward the non-conductive end; and the thickness of the functionally gradient material from the point of attachment to the non-conductive end is less than its thickness at the point of attachment.

4. (Original) A lamp seal as described in claim 2, in which the outside diameter of the functionally gradient material at and near the non-conductive end is smaller than the outside diameter at the point of attachment.